

**REMARKS**

In the non-final Office Action, the Examiner objects to claims 24-30 due to informalities; rejects claims 24-30 under 35 U.S.C. § 101 as directed to non-statutory subject matter; rejects claims 1, 3, 14-16, 19, 20, and 23-25 under 35 U.S.C. § 102(b) as unpatentable over GARDNER et al. (“Techniques for Finding Ring Covers in Survivable Networks,” Proceedings on IEEE GLOBECOM; 1994); rejects claims 2, 9-13, 17, and 30 under 35 U.S.C. § 103(a) as unpatentable over GARDNER et al. in view of CHOW et al. (U.S. Patent No. 7,133,410); rejects claims 4-8, 18, 21, and 26-28 under 35 U.S.C. § 103(a) as unpatentable over GARDNER et al. in view of KENNINGTON et al. (“Optimization Based Algorithms for Finding Minimal Cost Ring Covers in Survivable Networks,” *Computational Optimization and Applications*, 14; 1999); and rejects claims 22 and 29 under 35 U.S.C. § 103(a) as unpatentable over GARDNER et al. in view of GROVER et al. (U.S. Patent No. 6,819,662). Applicants respectfully traverse the objection and rejections.<sup>1</sup>

By way of the present amendment, Applicants cancel claim 20 without prejudice or disclaimer and amend claims 1, 3-6, 8-19, and 21-30 to improve form. No new matter has been added by way of the present amendment. Claims 1-19 and 21-30 are pending.

*Objection to the Claims*

The Examiner objects to claims 24-30 for reciting “machine-readable medium,” which is inconsistent with Applicants’ disclosure. Without acquiescing in the Examiner’s

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<sup>1</sup> As Applicants’ remarks with respect to the Examiner’s rejections overcome the rejections, Applicants’ silence as to certain assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, reasons for modifying a reference and/or combining references, assertions as to dependent claims, etc.) is not a concession by Applicants that such assertions are accurate or that such requirements have been met, and Applicants reserve the right to dispute these assertions/requirements in the future.

objection, but merely to expedite prosecution, Applicants amend claims 24-30 to recite a “computer-readable memory device.” As such, withdrawal of the objection to claims 24-30 is respectfully requested.

*Rejection under 35 U.S.C. § 101*

Claims 24-30 stand rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter for reciting a machine-readable medium. Without acquiescing in the Examiner’s rejection, but merely to expedite prosecution, Applicants amend claims 24-30 to recite a “computer-readable memory device.” As such, withdrawal of the rejection of claims 24-30 under 35 U.S.C. § 101 is respectfully requested.

*Claim rejection under 35 U.S.C. § 102(b) based on GARDNER et al.*

Pending claims 1, 3, 14-16, 19, and 23-25 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by GARDNER et al. Applicants respectfully traverse this rejection.

A proper rejection under 35 U.S.C. § 102 requires that a reference teach every aspect of the claimed invention. Any feature not directly taught must be inherently present. See M.P.E.P. § 2131. GARDNER et al. does not disclose or suggest the combination of features in Applicants’ claims 1, 3, 14-16, 19, and 23-25.

For example, claim 1 recites a processor-implemented method for designing a ring cover candidate for a network. The method includes receiving, at the processor, network configuration information and traffic demand information for the network; and generating, by the processor, the ring cover candidate, including a plurality of rings, based on the network configuration information and the traffic demand information, each of the rings including a plurality of network spans, where the generating the ring cover

candidate includes generating a plurality of ring cover candidates by using a different process to generate each of the ring cover candidates. GARDNER et al. does not disclose or suggest this combination of feature.

For example, GARDNER et al. does not disclose or suggest generating, by a processor, a ring cover candidate, including a plurality of rings, based on network configuration information and traffic demand information, each of the rings including a plurality of network spans, where the generating the ring cover candidate includes generating a plurality of ring cover candidates by using a different process to generate each of the ring cover candidates. A similar feature was previously presented in claim 20 (now canceled). The Examiner relies on page 1, column 2, lines 5-6 and 19-32; page 2, column 1, lines 36-38; page 2, column 2, lines 4-14; and page 3, column 1, lines 26-40 of GARDNER et al. as allegedly disclosing this feature of claim 1 (Office Action, pp. 3-4). Applicants respectfully disagree with the Examiner's interpretation of GARDNER et al.

At page 1, column 2, lines 5-6, GARDNER et al. discloses defines a ring cover as a set of rings that cover all links in a network. This section of GARDNER et al. does not disclose or suggest that generating a ring cover candidate includes generating a plurality of ring cover candidates by using a different process to generate each of the ring cover candidates. Therefore, this section of GARDNER et al. does not disclose or suggest generating, by a processor, a ring cover candidate, including a plurality of rings, based on network configuration information and traffic demand information, each of the rings including a plurality of network spans, where the generating the ring cover candidate includes generating a plurality of ring cover candidates by using a different process to generate each of the ring cover candidates, as recited in amended claim 1.

At page 1, column 2, lines 19-32, GARDNER et al. discloses that, although a typical number of candidate ring covers prohibits computing all and sequentially determining which is best, there may be cases where the network is either very small or can be logically decomposed into separate small pieces to be covered separately. In these cases, an algorithm to list all rings, and hence all possible ring covers, may be useful. This section of GARDNER et al. does not disclose generating a plurality of ring cover candidates by using a different process to generate each of the ring cover candidates. Rather, this section of GARDNER et al. merely discloses listing all rings. Therefore, this section of GARDNER et al. does not disclose or suggest generating, by a processor, a ring cover candidate, including a plurality of rings, based on network configuration information and traffic demand information, each of the rings including a plurality of network spans, where the generating the ring cover candidate includes generating a plurality of ring cover candidates by using a different process to generate each of the ring cover candidates, as recited in amended claim 1.

At page 2, column 1, lines 36-38, GARDNER et al. discloses an output that consists of a ring cover of minimum cost, where the cost of the ring cover is the sum, over all rings in the ring cover, of the sum of weights of links in a ring. This section of GARDNER et al. does not disclose generating a plurality of ring cover candidates by using a different process to generate each of the ring cover candidates. Therefore, this section of GARDNER et al. does not disclose or suggest generating, by a processor, a ring cover candidate, including a plurality of rings, based on network configuration information and traffic demand information, each of the rings including a plurality of network spans, where the generating the ring cover candidate includes generating a

plurality of ring cover candidates by using a different process to generate each of the ring cover candidates, as recited in amended claim 1.

At page 2, column 2, lines 4-14, GARDNER et al. discloses that, if a network in Eulerian, then a minimum ring cover is obtained for it by decomposing an Eulerian cycle K into a ring cover C. This section of GARDNER et al. does not disclose generating a plurality of ring cover candidates by using a different process to generate each of the ring cover candidates. Therefore, this section of GARDNER et al. does not disclose or suggest generating, by a processor, a ring cover candidate, including a plurality of rings, based on network configuration information and traffic demand information, each of the rings including a plurality of network spans, where the generating the ring cover candidate includes generating a plurality of ring cover candidates by using a different process to generate each of the ring cover candidates, as recited in amended claim 1.

At page 3, column 1, lines 26-40, GARDNER et al. discloses that an algorithm *Eulerian Ring Cover* computes a minimum cost ring cover for a network. This section of GARDNER et al. discloses computing a single ring cover. This section of GARDNER et al. does not disclose generating a plurality of ring cover candidates by using a different process to generate each of the ring cover candidates. Therefore, this section of GARDNER et al. does not disclose or suggest generating, by a processor, a ring cover candidate, including a plurality of rings, based on network configuration information and traffic demand information, each of the rings including a plurality of network spans, where the generating the ring cover candidate includes generating a plurality of ring cover candidates by using a different process to generate each of the ring cover candidates, as recited in amended claim 1.

For at least the foregoing reasons, Applicants submit that claim 1 is not anticipated by GARDNER et al.

Claims 3, 14, and 15 depend from claim 1. Therefore, these claims are not anticipated by GARDNER et al. for at least the reasons given above with respect to claim 1.

Independent claims 16, 23, and 24 recite features similar to, yet possibly of different scope than, features recited above with respect to claim 1. Therefore, these claims are not anticipated by GARDNER et al. for at least reasons similar to the reasons given above with respect to claim 1.

Pending claim 19 depends from claim 16. Therefore, claim 19 is not anticipated by GARDNER et al. for at least the reasons given above with respect to claim 16.

Claim 25 depends from claim 24. Therefore, claim 25 is not anticipated by GARDNER et al. for at least the reasons given above with respect to claim 24.

*Rejection under 35 U.S.C. § 103(a) based on GARDNER et al. and CHOW et al.*

Claims 2, 9-13, 17, and 30 stand rejected under 35 U.S.C. § 103(a) as unpatentable over GARDNER et al. and CHOW et al. Applicants respectfully traverse this rejection.

Claims 2 and 9-13 depend from claim 1; claim 17 depends from claim 16; and claim 30 depends from claim 24. Without acquiescing in the Examiner's rejection of claims 2, 9-13, 17, and 30, Applicants respectfully submit that the disclosure of CHOW et al. does not remedy the deficiencies in the disclosure of GARDNER et al. set forth above with respect to claims 1, 16, and 24. Therefore, claims 2, 9-13, 17, and 30 are patentable over GARDNER et al. and CHOW et al., whether taken alone or in any

reasonable combination, for at least the reasons given above with respect to claims 1, 16, and 24.

*Rejection under 35 U.S.C. § 103(a) based on GARDNER et al. and KENNINGTON et al.*

Claims 4-8, 18, 21, and 26-28 stand rejected under 35 U.S.C. § 103(a) as unpatentable over GARDNER et al. and KENNINGTON et al. Applicants respectfully traverse this rejection.

Claims 4-8 depend from claim 1; claims 18 and 21 depend from claim 16; and claims 26-28 depend from claim 24. Without acquiescing in the Examiner's rejection of claims 4-8, 18, 21, and 26-28, Applicants respectfully submit that the disclosure of KENNINGTON et al. does not remedy the deficiencies in the disclosure of GARDNER et al. set forth above with respect to claims 1, 16, and 24. Therefore, claims 4-8, 18, 21, and 26-28 are patentable over GARDNER et al. and CHOW et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claims 1, 16, and 24.

*Rejection under 35 U.S.C. § 103(a) based on GARDNER et al. and GROVER et al.*

Claims 22 and 29 stand rejected under 35 U.S.C. § 103(a) as unpatentable over GARDNER et al. and GROVER et al. Applicants respectfully traverse this rejection.

Claim 22 depends from claim 16 and claim 29 depends from claim 24. Without acquiescing in the Examiner's rejection of claims 22 and 29, Applicants respectfully submit that the disclosure of GROVER et al. does not remedy the deficiencies in the disclosure of GARDNER et al. set forth above with respect to claims 16 and 24. Therefore, claims 22 and 29 are patentable over GARDNER et al. and GROVER et al.,

whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claims 16 and 24.

*Conclusion*

In view of the foregoing amendments and remarks, Applicants respectfully request withdrawal of the outstanding rejections and the timely allowance of this application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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